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PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

CIBA-GEIGY CORPORATION
EAST LANSING, MICHIGAN
MID 067 352 989

FINAL REPORT

409578

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EPA Region	:	5
Site No.	:	MID 067 352 989
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EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Ciba-Geigy Corporation (Ciba-Geigy) facility in East Lansing, Ingham County, Michigan. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs identified.

The facility occupies 3 acres in a mixed-use industrial and commercial area. The Ciba-Geigy facility manufactures formulated epoxy and urethane thermoset systems. Ciba-Geigy operates a number of batch chemical processes. Process operations consist of charging raw material in a mixer or reactor. The material is either mixed or reacted and the product is removed. The mixer or reactor is cleaned with solvents. Process equipment is also cleaned. These operations generate the following hazardous waste streams: flammable rags (D001 and F005), off-specification and outdated urethane hardener (D009), spent halogenated flush solvent (F002), and ignitable spent solvent (D001 and F005). The Ciba-Geigy facility also generates nonhazardous off-specification reacted resins, acrylics, and isocyanates.

The facility has operated at its current location since 1952 and employs about 115 people. The facility consists of one manufacturing and warehouse building that also contains office space, finished goods storage space, a mixing room, a pilot plant, and packaging areas. The facility has eight aboveground storage tanks for raw material storage. Facility operations have remained essentially the same since Ciba-Geigy built the facility in 1952. According to facility representatives, a tool and die shop was located on the facility property before Ciba-Geigy began operations. Land use of the facility property before the tool and die shop is unknown. Ciba-Geigy is the facility's sole owner and operator.

The facility's current regulatory status is that of an interim status storage facility storing hazardous waste on site for less than 90 days. The facility submitted a Notification of Hazardous Waste Activity to EPA on August 7, 1980 as a generator and treatment, storage, or disposal facility. The Ciba-Geigy facility submitted a Part A permit application for Hazardous Waste Storage Area III (SWMU 3)

in 1980. In 1986, Ciba-Geigy submitted a revised Part A permit application which included two additional hazardous waste storage areas: Hazardous Waste Storage Area I (SWMU 1) and Hazardous Waste Storage Area II (SWMU 2). Hazardous Waste Storage Areas I, II, and III underwent RCRA-related closure activities in 1989. Closure certification had not yet been approved by the Michigan Department of Natural Resources (MDNR) at the time of the VSI.

In 1985, 10 underground storage tanks (USTs) which had contained product were removed from the facility. After removal of the USTs, split-spooned soil samples were collected in 1985. Analytical results showed no contamination except at the 10 foot below ground surface (bgs) level. Based on the analytical results of the soil samples and the hydrogeologic conditions on site, the subsequent excavation of the tank area was extended about 1 foot into the grey clay layer. As a result of the release from the USTs, the Ciba-Geigy facility was placed on the Michigan Act 307 list. Soil borings collected in 1987, 1988, and 1989 contained nondetectable levels of all EPA Method 601 and 602 compounds except for toluene which was detected at 1 part per billion. Therefore, the facility is no longer included on the Michigan Act 307 list.

The PA/VSI identified the following three SWMUs at the facility:

Solid Waste Management Units

1. Hazardous Waste Storage Area I
2. Hazardous Waste Storage Area II
3. Hazardous Waste Storage Area III

No AOCs were identified during the PA/VSI.

The potential for release to groundwater, air, and on-site soils from all SWMUs is low. The units manage waste in containers of 55-gallons or less and are located on concrete or asphalt. Drums are stored closed when waste is not being added. The potential for release to surface water from Hazardous Waste Storage Areas I and II (SWMUs 1 and 2) is low because they are located indoors on a concrete floor. All drums are stored closed and wastes are managed in 55-gallon drums.

The potential for release to surface water from Hazardous Waste Storage Area III (SWMU 3) is low. A stormwater drain which discharges directly to the Red Cedar River is located 40 feet south of the unit. According to facility representatives, this drain is plugged and stormwater accumulated in the catch basins are visually inspected to ensure a release has not occurred before the plugs are opened and the stormwater is released.

The facility is located in East Lansing, Michigan. The nearest residence is located about 50 feet east of the facility. Facility access is controlled by a 6-foot-high fence that surrounds the facility.

The nearest surface water body, Red Cedar River, is located about 40 feet southwest of the facility and is used for surface water run-off. The nearest sensitive environment, a seasonally forested palustrine wetland, is located about 200 feet southeast of the facility.

Groundwater is used as a source of drinking water in the area. The nearest drinking water wells are in the East Lansing municipal well field located 0.5 mile south and downgradient of the facility. The Red Cedar River is located between the facility and these wells. The nearest well is located 200 feet east of the facility and is a groundwater monitoring well.

PRC recommends MDNR resolve the status of SWMUs 1, 2, and 3.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Ciba-Geigy Corporation (Ciba-Geigy) facility (EPA Identification No. MID 067 352 989) in East Lansing, Ingham County, Michigan. The PA was

completed on May 20, 1993. PRC gathered and reviewed information from the Federal Emergency Management Agency (FEMA); the Michigan Department of Natural Resources (MDNR); the National Weather Service (NWS); the U.S. Department of the Interior (DOI); the U.S. Geological Survey (USGS); and from EPA Region 5 RCRA files. The VSI was conducted on May 26, 1993. It included interviews with facility representatives and a walk-through inspection of the facility. PRC identified three SWMUs at the facility.

The VSI is summarized and five inspection photographs are included in Appendix A. Field notes from the VSI are included in Appendix B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors.

2.1 FACILITY LOCATION

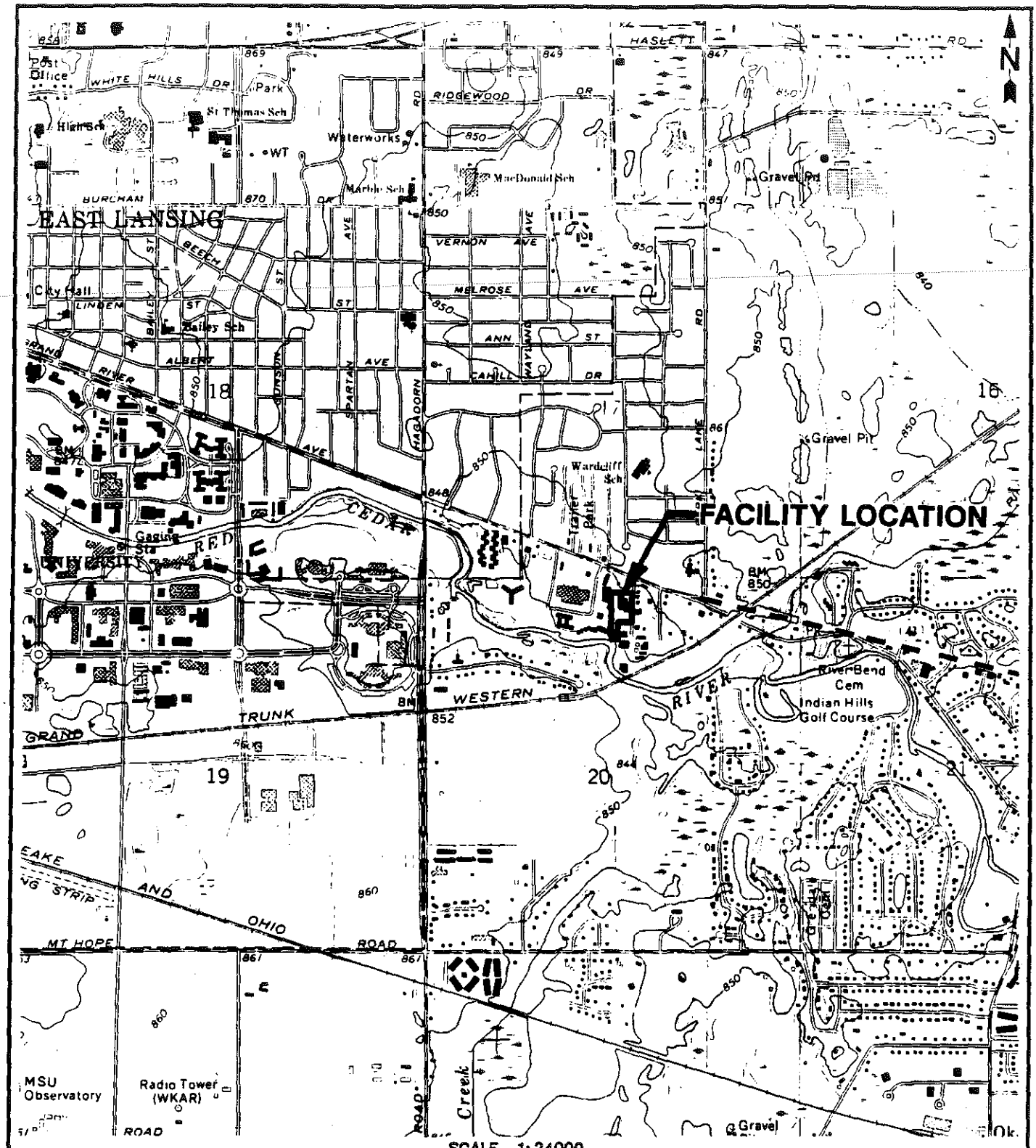
The Ciba-Geigy facility is located at 4917 Dawn Avenue in East Lansing, Ingham County, Michigan (latitude 42°43'31"N and longitude 84°27'06"W), as shown in Figure 1 (Ciba-Geigy, 1980b). The facility occupies 3 acres in a mixed-use industrial and commercial area.

The Ciba-Geigy facility is bordered on the north by Tuffy Shocks, Brakes and Mufflers; on the west by Capitol Lighting Company; on the south by Cruse Communication Company; and on the east by a residence and a facility under construction.

2.2 FACILITY OPERATIONS

The Ciba-Geigy facility manufactures formulated epoxy and urethane thermoset systems. Ciba-Geigy operates a number of batch chemical processes. Process operations consist of charging raw material in a mixer or reactor. The materials are then either mixed or reacted and the finished product is removed. The mixer or reactor is then cleaned with solvents. Process equipment is also cleaned.

The facility has operated at its current location since 1952 and employs about 115 people. The facility consists of one manufacturing and warehouse building that also contains office space, finished goods storage space, a mixing room, a pilot plant, and packaging areas. Outside of the building are Hazardous Waste Storage Area III (SWMU 3) and parking areas. The facility has 89,830 square feet of indoor space.


EAST LANSING
FACILITY LOCATION
N
SCALE 1:24000
1 1/2 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
SCALE: 1" = 2,000'
MICHIGAN
QUADRANGLE LOCATION
CIBA-GEIGY CORPORATION
EAST LANSING, MICHIGAN
FIGURE 1
FACILITY LOCATION
PRC ENVIRONMENTAL MANAGEMENT, INC.
SOURCE: MODIFIED FROM USGS,
EAST LANSING, MICHIGAN QUADRANGLE, 1976
CIBA.DWG - 07/12/83 - MLB 309-R0503/2466

Currently the facility has the following aboveground, indoor storage tanks:

- One 10000-gallon tank containing polymethylene polyphenyl isocyanate
- One 10000-gallon tank containing polyester triol
- One 6000-gallon tank and one 4000-gallon tank containing epoxy resin
- Three 4000-gallon tanks containing epoxy resin

Facility operations have remained almost the same since Ciba-Geigy built the facility in 1952. According to facility representatives, a tool and die shop was located on the facility property before Ciba-Geigy began operations. Land use of the facility property before the tool and die shop is unknown.

2.3 WASTE GENERATION AND MANAGEMENT

This section describes waste generation and management at the Ciba-Geigy facility. The facility generates the following hazardous waste streams: flammable rags (D001 and F005), off-specification and outdated urethane hardener (D009), spent halogenated flush solvent (F002), and ignitable spent solvent (D001 and F005). The facility also generates a nonhazardous waste stream consisting of off-specification reacted resins, acrylics, and isocyanates. The facility's SWMUs are identified in Table 1. The facility layout, including SWMUs, is shown in Figure 2. The facility's waste streams are summarized in Table 2. Annual waste generation rates presented below are based on 1992 data.

Flammable rags (D001 and F005) are generated when rags are soaked with flammable solvents and alcohols used to clean equipment. The rags are accumulated and stored in 55-gallon drums at Hazardous Waste Storage Area II (SWMU 2). The full drums are then taken to Hazardous Waste Storage Area III (SWMU 3). The flammable rags are transported off site by Clean Harbors, Inc. (Clean Harbors), to its facility in Chicago, Illinois, where they are used for fuel blending. Ciba-Geigy generates about 8,000 pounds of this waste annually (Ciba-Geigy 1993).

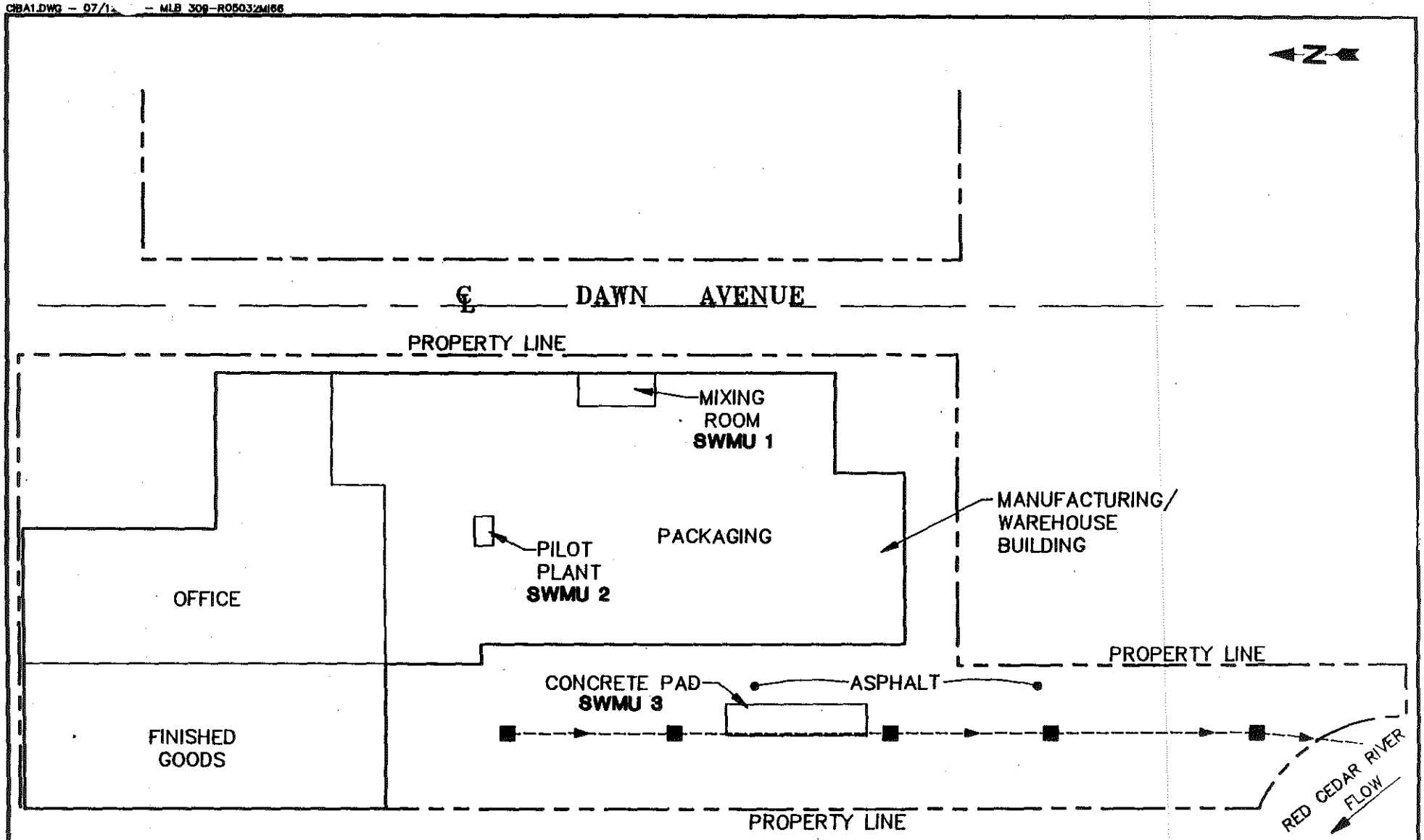
TABLE 1

SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Hazardous Waste Storage Area I	Yes	Facility completed closure activities for this unit in 1989 and has submitted closure certification to MDNR; active, currently stores hazardous waste for less than 90 days
2	Hazardous Waste Storage Area II	Yes	Facility completed closure activities for this unit in 1989 and has submitted closure certification to MDNR; active, currently stores hazardous waste for less than 90 days
3	Hazardous Waste Storage Area III	Yes	Facility completed closure activities for this unit in 1989 and has submitted closure certification to MDNR; active, currently stores hazardous waste for less than 90 days

Note:

[a] A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.



SOLID WASTE MANAGEMENT UNITS

SWMU 1 HAZARDOUS WASTE STORAGE AREA I
SWMU 2 HAZARDOUS WASTE STORAGE AREA II
SWMU 3 HAZARDOUS WASTE STORAGE AREA III

LEGEND

---■--- APPROXIMATE LOCATION OF STORM SEWER AND CATCH BASINS

SOURCE: MODIFIED FROM SEG ENGINEERS 1988

NOT TO SCALE

CIBA–GEIGY CORPORATION
EAST LANSING, MICHIGAN

FIGURE 2

FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT, INC.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit
Flammable rags/(D001 and F005)	Equipment cleaning	2 and 3
Off-specification and outdated urethane hardener/(D009)	Off-specification and outdated product manufacture	1 and 3
Spent halogenated flush solvent/(F002)	Equipment cleaning	1, 2, and 3
Ignitable spent solvent/(D001 and F005)	Equipment cleaning	1, 2, and 3
Nonhazardous reacted resins, acrylics, and isocyanates/NA	Off-specification product manufacture	1 and 3

Notes:

[a] Not applicable (NA) designates nonhazardous waste.

Off-specification and outdated urethane hardener (D009) is generated from off-specification and outdated product manufactured at the facility. The hardeners contain a small amount of mercury, and the waste is classified as hazardous for mercury (D009). The off-specification and out-dated urethane hardener (D009) is accumulated and stored in 55-gallon drums at Hazardous Waste Storage Area I (SWMU 1). The full drums are then taken to Hazardous Waste Storage Area III (SWMU 3). The waste is transported off site by Clean Harbors to its facility in Chicago, Illinois, for fuel blending. Ciba-Geigy generates about 3,900 pounds of this waste annually (Ciba-Geigy 1993).

Spent halogenated flush solvent (F002) is generated from flushing metering, mixing, and dispensing equipment with 1,1,1-trichloroethane. The halogenated flush solvent (F002) is accumulated in 55-gallon drums in Hazardous Waste Storage Areas I and II (SWMUs 1 and 2). The full drums are then taken to Hazardous Waste Storage Area III (SWMU 3). The drums are transported by Clean Harbors to its facility in Chicago, Illinois, for recovery. Ciba-Geigy generates about 6,600 pounds of this waste annually (Ciba-Geigy 1993).

Ignitable spent solvent (D001 and F005) is generated from cleaning mixing equipment. These spent solvents consist of ethanol, HiSol 10, amyl alcohol, and toluene. The ignitable spent solvents (D001 and F005) are accumulated and stored in 55-gallon drums in Hazardous Waste Storage Areas I and II (SWMUs 1 and 2). The full drums are then taken to Hazardous Waste Storage Area III (SWMU 3). This waste is transported by Hazmat Environmental Services to the Safety-Kleen Corporation facility in Dolton, Illinois, for fuel blending. Ciba-Geigy generates about 38,000 pounds of this waste annually (Ciba-Geigy 1993).

Nonhazardous reacted resins, acrylics, and isocyanates are generated from off-specification materials products. These wastes are accumulated in 55-gallon drums in Hazardous Waste Storage Area I (SWMU 1) and are taken to Hazardous Waste Storage Area III (SWMU 3). The waste is transported by Clean Harbors to its facility in Chicago, Illinois, for fuel blending. A small percentage of this waste does not have sufficient heating value for fuels blending and is landfilled. Ciba-Geigy generates approximately 60,000 pounds of this waste annually (PRC 1993).

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility.

In September 1985, Ciba-Geigy requested that Snell Environmental Group, Inc. (SEG), remove 10 underground storage tanks (UST) from the facility. Seven of the tanks previously contained toluene, propylene oxide, ethanol, triethylene tetramine, and diethylene triamine. Two of the remaining three tanks contained paraffin oil and fuel oil, and the last was empty (SEG 1986).

After the tanks were removed, split-spoon soil samples were collected from at 5, 10, and 15 feet below ground surface (bgs) and at the top of the underlying clay layer at 11 feet bgs. Analytical results from the soil samples revealed no contamination except at the 10 foot bgs level, which contained some contamination (SEG 1986).

Based on the analytical results of the soils samples and the hydrogeologic conditions onsite, MDNR and Ciba-Geigy concluded that the soil contamination would be vertically contained by the grey clay layer underlying the facility at 11 feet bgs. The subsequent excavation of contaminated soil in the tank area was extended to about 11 to 12 feet bgs and about 1 foot into the grey clay layer. The excavation was backfilled with clean sand (SEG 1986).

As a result of the release from the USTs, the Ciba-Geigy facility was placed on the Michigan Act 307 list. Soil borings were collected 1987, 1988, and 1989 after the contaminated soil in the UST area had been excavated, and the area backfilled with clean sand. These borings contained nondetectable levels of all EPA Method 601 and 602 compounds except for toluene which was detected at 1 part per billion in two of five samples. After the submission of these results, the facility is no longer included on the Michigan Act 307 list.

Four groundwater monitoring wells are located east and off-site of the facility. In 1989, perchloroethylene was detected at 20 parts per billion in one of the wells. MDNR suspected that the contamination was not attributable to the facility, but was the result of dumping by a "backyard mechanic" because on-site surface soil did not reveal contamination (MDNR 1992). Groundwater

monitoring results from the remaining three wells have not revealed hazardous constituents at levels exceeding detection limits (ESE 1992).

No other releases to groundwater, surface water, air, or on-site soils have been documented at the facility.

2.5 REGULATORY HISTORY

The Ciba-Geigy facility submitted a Notification of Hazardous Waste Activity form to EPA on August 7, 1980, as a treatment, storage, or disposal facility (Ciba-Geigy 1980a). The facility submitted a RCRA Part A permit application on November 14, 1980. The application listed container storage (S01) for Hazardous Waste Storage Area III (SWMU 3) at a capacity of 8,250 gallons. This application listed the following waste codes: F002, F003, F005, U002, U008, U009, U028, U069, U107, U118, U159, U162, U220, U221, U226, D001, D002, D003, and D004 (Ciba-Geigy 1980b). On June 11, 1982, EPA acknowledged interim status for the Ciba-Geigy facility (EPA, 1982). On October 27, 1986, Ciba-Geigy submitted a revised Part A permit application to EPA (Ciba-Geigy 1986). This application also included container storage in the Hazardous Waste Storage Areas I and II (SWMU 1 and 2). This application was accepted by MDNR on November 19, 1986 (MDNR 1986b).

Ciba-Geigy submitted a closure plan to MDNR because the facility did not wish to pursue a Part B permit. On January 9, 1989, MDNR approved the facility's closure plan submitted in November 1988 (MDNR 1989a). Hazardous Waste Storage Areas I, II, and III (SWMUs 1, 2, and 3) underwent RCRA closure activities on June 26, 1989. The units were triple rinsed, and the rinsewater was collected in 55-gallon drums. The rinsewater was analyzed for mercury, ignitability, and volatile organic compounds. This documentation has been submitted to MDNR. MDNR has not yet approved the closure activities. The Ciba-Geigy facility is currently operating as an interim status storage facility until its closure is approved. However, the facility stores hazardous waste for less than 90 days only.

In the past, Ciba-Geigy has had minor RCRA compliance problems. MDNR conducted RCRA compliance inspections in 1983, 1984, 1985, 1986, 1987, 1988, 1989, and 1990. The facility was

cited for deficiencies in the contingency plan, training program, and training records. The facility was also cited for cracks and for inadequate secondary containment in Hazardous Waste Storage Area III (SWMU 3) (MDNR 1983a, 1983b, 1984, 1985, 1986a, 1987, 1988, 1989b, and 1990). The facility is currently in compliance.

The facility is required to have operating air permits. Ciba-Geigy has numerous air permits for the process and control equipment, and various raw material and product formulation operations. Ciba-Geigy operates under the following air permit numbers issued by MDNR: 122-88, 134-82, 285-90, 480-91, 537-80, 538-80, 539-80, 580-88, 677-86, 688-80, 690-80, 691-80, 807-80, 808-80, 809-80, and 871-90 (Ciba-Geigy 1992).

The facility is not required to have a National Pollutant Discharge Elimination System (NPDES) permit. No CERCLA activity has taken place at the facility.

In 1986 10 USTs were removed from the facility. Based on sampling results from the soil removal, the facility was placed on the Michigan Act 307 list. The facility was removed from this list as a result of subsequent sampling conducted in 1989. See Section 2.4 for additional information regarding facility USTs.

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and groundwater in the vicinity of the facility.

2.6.1 Climate

The climate in Ingham County is characterized by mild continental conditions. Weather conditions are monitored at the Capital City Airport in Lansing, Michigan. The annual average temperature is 37.2°F, and the annual average high temperature is 57.1°F. The annual average precipitation is 29.58 inches and is moderately distributed over the year, with peak rainfall in June. The annual average evaporation rate is 30 to 32 inches. The 1-year, 24-hour rainfall value is 2.0 inches. The

prevailing wind direction is southwest at an average speed of 10 miles per hour (National Weather Service 1990).

2.6.2 Flood Plain and Surface Water

The Ciba-Geigy facility is not located in a 100-year flood plain (FEMA 1977). The nearest surface water body, Red Cedar River is located about 40 feet southwest of the facility. The Red Cedar River is used for surface water run-off. The Red Cedar River discharges to the Grand River, in Lansing, Michigan, which subsequently discharges to Lake Michigan.

Surface water drainage at the facility is toward the west and southwest to the Red Cedar River. Storm sewers approximately 40 feet from the facility building drain directly into the Red Cedar River. Plugs are in the drain to prevent releases to surface water. According to facility representatives, stormwater retained in catch basins are visually checked for releases before the stormwater is discharged.

2.6.3 Geology and Soils

No site-specific geologic information was available, so regional information was used. East Lansing is located in Michigan's lower peninsula and in the Central Lowlands physiographic province. The province is characterized by glacial deposits underlain by sedimentary bedrock of the Paleozoic and Mesozoic Eras. Area glacial deposits consist of sand, silt, gravel, and clay.

The topography of Ingham County consists of glacial features characterized by flat till plains to slight hilly areas of moraines and outwash deposits. Surficial deposits in the East Lansing area predominantly consist of glacial outwash plains.

The Pennsylvanian Period bedrock in the area consists of the Saginaw and Grand River Formations, which are hydraulically connected. The Saginaw Formation consists of sandstones and shales interbedded with limestone and coal. Its thickness ranges from 10 to several hundred feet. The Grand River Formation, which consists of sandstone, lies below the Saginaw Formation and varies in thickness. The Grand River Formation is eroded in the East Lansing Area (NWS, 1990).

Soil borings were drilled at the facility during the removal of the USTs in 1986. Soil at approximately 6 feet bgs consists of fill sand, clay binder, and pebbles. From 6 to 11.5 feet bgs compact brown sand with medium coarse layers is present. Stiff gray clay is present below 11 feet bgs (SEG 1986).

2.6.4 Groundwater

Ingham County obtains drinking water from two principal aquifer systems: (1) a glacial outwash and lacustrine aquifer, and (2) a bedrock aquifer system. The glacial outwash and lacustrine aquifer system ranges in thickness from 10 to several hundred feet and produces up to 1,000 gallons per minute (gpm) of water. Organic soil and glacial fill material are present from 0 to 23 feet bgs. The glacial aquifer system is composed of outwash and glaciofluvial deposits of sand and gravel.

The bedrock aquifer system of the Saginaw Formation is Ingham County's principle bedrock aquifer. The Saginaw Formation ranges in thickness from 10 to several hundred feet and yields up to 300 gpm. The depth to the bedrock aquifer in Ingham County typically ranges from 150 to 220 feet bgs. Static water levels in Ingham County range from 25 to 50 feet bgs. The water is confined and has an average transmissivity of 130,300 square feet per day. Groundwater in the Saginaw Formation flows northeast (USDA 1979).

The static water levels beneath the facility are 5.7 to 6.8 feet bgs (SEG 1986).

2.7 RECEPTORS

The Ciba-Geigy facility occupies 3 acres in a mixed-use residential and industrial area in East Lansing, Michigan. East Lansing has a population of about 48,300.

The Ciba-Geigy facility is bordered on the north by Tuffy Shocks, Brakes, and Mufflers; on the west by Capitol Lighting Company; on the south by Cruse Communication Company; and on the east by a residence and a facility under construction. The nearest residence is located about 50 feet east of the facility. Facility access is controlled by a 6-foot-high fence that surrounds the facility.

The nearest surface water body, Red Cedar River, is located southwest of the facility and is used to collect surface water runoff. The nearest sensitive environment, a seasonally forested, palustrine wetland, is located about 200 feet southeast of the facility (DOI 1993).

Groundwater is used as a source of drinking water in the area. The nearest drinking water wells are in the East Lansing municipal well field located 0.5 mile south and downgradient of the facility. The nearest well is located 200 feet east of the facility and is a groundwater monitoring well. The Red Cedar River is located between the facility and these wells.

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the three SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

SWMU 1 **Hazardous Waste Storage Area I**

Unit Description: This unit is located inside the manufacturing and warehouse building. The unit measures 20 by 30 feet and consists of a sealed, reinforced concrete floor; a masonry block east wall, and a vent hood with associated ductwork along the east wall.

Date of Startup: This unit began operation in 1986.

Date of Closure: The facility has completed closure of the unit, but the closure has not been approved by MDNR. The unit currently manages hazardous waste for less than 90 days.

Wastes Managed: This unit manages off-specification and outdated urethane hardener (D009), ignitable spent solvents (D001 and F005), and spent halogenated flush solvents (F002) in 55-gallon drums. This unit also manages nonhazardous resins, acrylics, and isocyanates. When full, the drums of waste are taken to Hazardous Waste Management Unit III (SWMU 3).

Release Controls: The unit is located indoors. All floor drains in the building have been sealed.

History of Documented Releases: No releases from this unit have been documented.

Observations:	The unit contained the following hazardous wastes at the time of the VSI: one 55-gallon drum of D009, one 55-gallon drum of F002, one 55-gallon drum of D001 and F005. The unit contained the following nonhazardous wastes two 55-gallon drums of resin, one 55-gallon drum of isocyanate, and one 55-gallon drum of acrylic. PRC did not observe any signs of spills or leaks at the unit (see Photograph No. 3).
SWMU 2	**Hazardous Waste Storage Area II**
Unit Description:	This unit consists of a 20- by 20-foot area in the manufacturing and warehouse building. The unit consists of a sealed, reinforced concrete floor; a masonry block east wall; and a vent hood with associated ductwork along the east wall.
Date of Startup:	This unit began operations in 1986.
Date of Closure:	The facility has completed closure of the unit, but the closure has not been approved by MDNR. The unit currently manages hazardous waste for less than 90 days.
Wastes Managed:	This unit manages 55-gallon drums of flammable rags (D001 and F005), spent halogenated flush solvent (F002), and ignitable spent solvent (D001 and F005). When full, the drums are taken to Hazardous Waste Storage Area III (SWMU 3).
Release Controls:	This unit is located indoors on a concrete floor. All drains in the building are plugged.
History of Documented Releases:	No releases have been documented from this unit.

Observations:	At the time of the VSI, PRC observed two 55-gallon drums of waste with waste code D001 and two 55-gallon drums of waste with waste code F005 (see Photographs No. 1 and 2).
SWMU 3	**Hazardous Waste Storage Area III**
Unit Description:	This unit consists of a fabricated steel building measuring 20 by 80 feet outside and west of the manufacturing and warehouse building. The unit has a reinforced concrete floor, an uninsulated metal roof, and panels on the north and south end of the building. The unit is surrounded by asphalt. Storm sewers are located adjacent to the unit. The southern portion of the building manages hazardous and nonhazardous wastes, and the northern portion of the unit manages raw material.
Date of Startup:	This unit began operations in 1980.
Date of Closure:	The facility has completed closure of the unit, but closure has not been approved by MDNR. The unit currently manages hazardous waste for less than 90 days.
Wastes Managed:	This unit manages the following hazardous wastes in 55-gallon drums: flammable rags (D001 and F005), off-specification and outdated urethane hardener (D009), spent halogenated flush solvent (F002), and ignitable spent solvent (D001 and F005). The unit also manages nonhazardous resins, acrylics, and isocyanates.
Release Controls:	Waste is stored in drums on pallets over a reinforced concrete floor. Plugs are in the drains to prevent releases to surface water. According to facility representatives, the stormwater catch basins are visually checked to ensure no releases have occurred before the plugs are opened to discharge stormwater.

History of
Documented Releases: No releases have been documented from this unit.

Observations: At the time of the VSI, PRC observed five drums in the unit with waste code F005 and four drums containing waste with waste code D009. All drums were located on wooden pallets (see Photographs No. 4 and 5). Stormwater sewers that discharge to the Red Cedar River are located about 40 feet south of the unbermed unit. On-site soils are located about 30 feet from the unit.

4.0 AREAS OF CONCERN

PRC identified no AOCs during the PA/VSI.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified three SWMUs and no AOCs at the Ciba-Geigy facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. Following are PRC's conclusions and recommendations for each SWMU. Table 3, located at the end of this section, summarizes the SWMUs at the facility and the recommended further actions.

SWMU 1 **Hazardous Waste Storage Area I**

Conclusions: This unit is located inside the manufacturing and warehouse building. The unit measures 20 by 30 feet and consists of a sealed, reinforced concrete floor; a masonry block east wall; and a vent hood. The unit has been in use since 1986. The unit currently manages hazardous and nonhazardous waste in 55-gallon drums for less than 90 days. Ciba-Geigy completed closure of this unit in 1989. The storage pad of the unit was triple rinsed during closure. The potential for release to groundwater, surface water, air, and on-site soils from this unit is low. Drums containing wastes are stored indoors on a concrete floor. The 55-gallon drums are stored for less than 90 days to minimize the quantity of waste on site.

Recommendations: Pending MDNR closure approval, PRC recommends no further action for this unit.

SWMU 2 **Hazardous Waste Storage Area II**

Conclusions: This unit consists of a 20- by 20-foot area in the manufacturing and warehouse building. The unit has a sealed, reinforced concrete floor; a masonry block east wall; and a vent hood. This unit began operations in 1986

and currently manages hazardous and nonhazardous wastes for less than 90 days. The unit underwent closure activities in 1989. The unit was triple-rinsed as part of the closure activities. The potential for release to groundwater, surface water, air, and on-site soils from this unit is low. Drums containing wastes are stored indoors on a concrete floor. The 55-gallon drums are stored for less than 90 days to minimize the quantity of waste on site.

Recommendations: Pending MDNR closure approval, PRC recommends no further action for this unit.

SWMU 3 **Hazardous Waste Storage Area III**

Conclusions: This unit consists of a fabricated steel building measuring 20 by 80 feet outside and west of the manufacturing and warehouse building. It consists of a reinforced concrete floor, an uninsulated metal roof, and panels on the north and south ends of the building. The southern portion of the building manages hazardous and nonhazardous wastes. The facility completed closure of this unit in 1989. The unit was triple-rinsed as part of the closure activities. At the time of the VSI, MDNR had not yet approved these closure activities. The potential for release to groundwater, air, and on-site soils is low. Drums containing wastes are protected from the elements by the structure. The drums are stored on pallets over reinforced concrete to make leak detection possible. The unit is surrounded by asphalt and on-site soils are located about 30 feet away. Wastes are managed in 55-gallon drums for less than 90 days to minimize the quantity of waste stored on-site. The potential for release to surface water from this unit is low. Stormwater sewers that discharge directly to the Red Cedar River have plugs in them to prevent releases. Stormwater catch basins are visually checked to ensure a release has not occurred before the plugs are pulled.

Recommendations: Pending closure of this unit, PRC recommends no further action.

TABLE 3

SWMU SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Hazardous Waste Storage Area I	1986 to present	No	None pending closure approval
2. Hazardous Waste Storage Area II	1986 to present	No	None pending closure approval
3. Hazardous Waste Storage Area III	1980 to present	No	None pending closure approval

REFERENCES

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MDNR. 1983a. Letter regarding Compliance Evaluation Inspection From Leroy Vahovick, Water Quality Specialist. To Mike Munsell, Ciba-Geigy. May 9.

MDNR. 1983b. Letter regarding Compliance Evaluation Inspection. From Leroy Vahovick, Water Quality Specialist. To Mike Munsell, Ciba-Geigy, Regarding Compliance Evaluation Inspection. December 9.

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MDNR. 1988. Letter regarding Compliance Evaluation Inspection. From Leroy Vahovick, Environmental Quality Analyst. To Mike Munsell, Ciba-Geigy. June 21.

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MDNR. 1989b. Letter regarding Compliance Evaluation Inspection. From Leroy Vahovick, Environmental Quality Analyst. To Mike Munsell, Ciba-Geigy. May 10.

MDNR. 1990. Letter regarding Compliance Evaluation Inspection. From Leroy Vahovick, Environmental Quality Analyst. To Mike Munsell, Ciba-Geigy. April 20.

MDNR. 1992. Letter regarding Perchloroethylene Monitoring. From Jean Haight, Environmental Quality Analyst. To Mr. Mike Munsell, Ciba-Geigy. May 11.

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PRC. 1993. Telephone Conversation regarding Waste Generation and Disposition. Between Cathy M. Collins, Chemical Engineer and Mike Munsell, Ciba-Geigy. August 24.

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U.S. Department of the Interior (DOI). 1993. National Wetlands Inventory. Map of the East Lansing, Michigan, Quadrangle.

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U.S. Geological Survey (USGS). 1970. 7.5-Minute Topographic Map of East Lansing, Michigan, Quadrangle. Photorevised 1976.

APPENDIX A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

(Four Pages)

VISUAL SITE INSPECTION SUMMARY

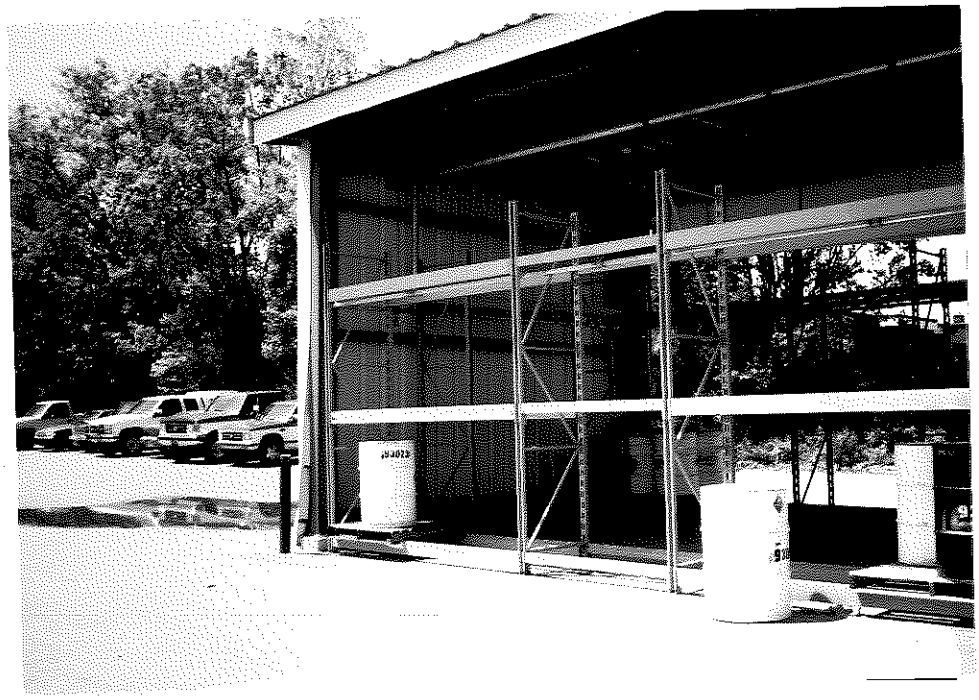
Ciba-Geigy Corporation (Ciba-Geigy)
4917 Dawn Avenue
East Lansing, MI 48823-5691
MID 067 352 989

Date:	May 26, 1993
Primary Facility Representative: Representative Telephone No.:	Mike Munsell, Ciba-Geigy 517/333-1303
Inspection Team:	Mary Wojciechowski, PRC Environmental Management, Inc. (PRC) Cathy M. Collins, PRC
Photographer:	Cathy M. Collins
Weather Conditions:	Sunny; 65 °F; calm
Summary of Activities:	The visual site inspection (VSI) began at 12:00 p.m. with an introductory meeting. The facility representative informed PRC that he had received a summons to appear in court at 1:30 p.m. The inspection team consulted with the facility representative and agreed to conduct the VSI tour based on the facility's size and history. PRC conducted a short interview which confirmed information regarding facility history and operations. The VSI tour began at 12:40 p.m. The inspection team walked through the process areas, viewed the areas generating this waste, and the units managing them. The inspection team viewed the following areas: Hazardous Waste Storage Area I (SWMU 1), Hazardous Waste Storage Area II (SWMU 2), and Hazardous Waste Storage Area III (SWMU 3). The tour concluded at 12:55 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 1:00 p.m.

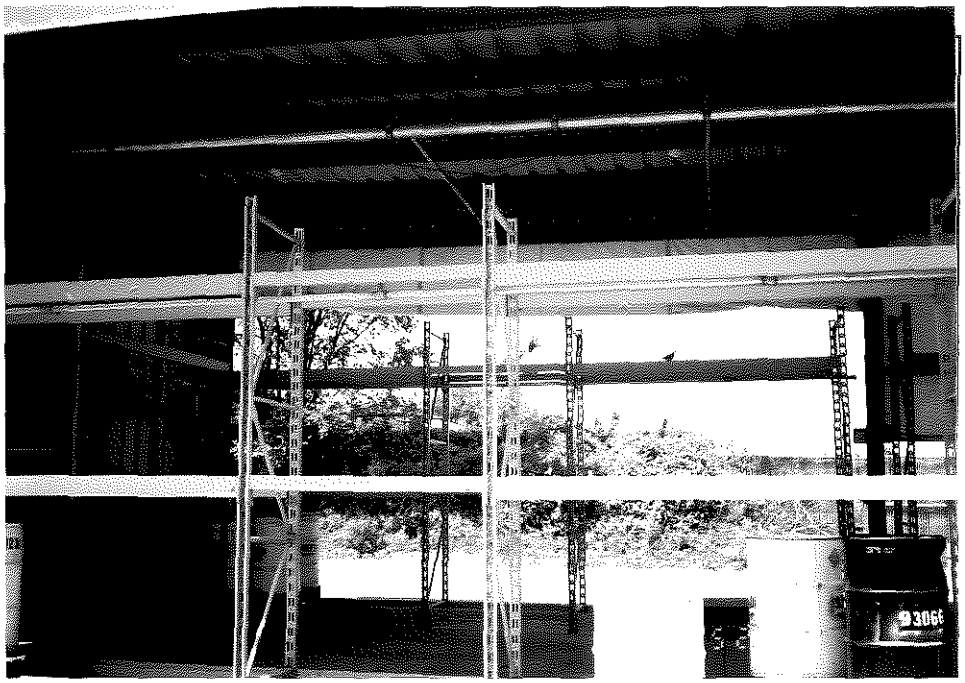
Photograph No. 1 Location: SWMU 2
Orientation: West Date: 5/26/93
Description: Hazardous Waste Management Unit II; waste is located indoors on a concrete floor in this unit

Photograph No. 2 Location: SWMU 2
Orientation: North Date: 5/26/93
Description: Hazardous Waste Storage Area II; parts washers are located on the left

Photograph No. 3 Location: SWMU 1
Orientation: Northeast Date: 5/26/93
Description: Hazardous Waste Management Unit I; waste is located indoors on a concrete floor in this unit; drums containing waste are located in the foreground



Photograph No. 4 Location: SWMU 3
Orientation: West Date: 5/26/93
Description: Hazardous Waste Storage Area III; waste is stored within the shelter; the south side of the shelter is used for waste accumulation; the north side is used for raw material storage



Photograph No. 5
Orientation: Southwest
Location: SWMU 3
Date: 5/26/93
Description: Hazardous Waste Storage Area III; drums containing waste are on pallets

APPENDIX B

VISUAL SITE INSPECTION FIELD NOTES

(Four Pages)

(1) 3)

Michael L. Munsell
SH & E Manager

Ciba-Geigy Corporation
4917 Dawn Avenue
East Lansing, MI 48823-5691
Telephone 517 333-1303
Fax 517 351-9003

Formulated Systems Group

SUNNY 65°F
CALM
PRC on SITE 12:00
N. ~~Residence~~ East
of facility
facility under
construction
Shaw Winkler
South
CRUSE Communication Co.
N. Tuffy Shocks
Brake & Mufflers

(1) 3

CIBA - GEIGY
26 MAY 1993
MID
EAST LANSING,
4917 DAWN AVE
SUNNY 65°F
CALM
PRC ON SITE 12:00
Nearest Residence East
of facility
facility under
construction
Shaun Winkler
South
CRUSE Communication Co.
N. Tuffy Shocker
Brake Mufflers

(2)

Waste cleaning
process equipment
~~transport to~~
storage area
Waste
off spec
material
take to storage
Flammable
Photo rags SAA W
Photo 2 N
Storage Area
and Parts washer
Resin Solvent
Hardener Solvent
Toluene -2-
Concrete

(3)

~~one~~ Off spec
Transfer waste
in containers
in drum
Photo 3 NE
IDR IDR
D009 D002
2 Resin
1 isocyanate
1 Acrylic
1 F005 D001

Photo 4
West
Hazardous Waste
Storage Area
Photo 5 SW
Storage Area
on Pallets
~~||||~~ F005
|||| D009

(4)

Removed 11 USTs 1985

PCE purchased land

Area II Clearing and top off

Area II Off spec

Area III - 1980

Facility representative explained he needed to be in court at 1:30 pm today. PRC agreed that we will finish the inspection by letter at a later date.

PRC off-site @ 1:00 pm.

Cathy M. Miller

(5)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

HRE-8J

May 19, 1993

Mr. Mike Munsell
Ciba-Geigy Corporation
4917 Dawn Avenue
East Lansing, Michigan 48823

Re: Visual Site Inspection
Ciba-Geigy Corporation
East Lansing, Michigan 48823
MID 067 352 989

Dear Mr. Munsell:

The United States Environmental Protection Agency (U.S. EPA) Region V will conduct a Preliminary Assessment and a Visual Site Inspection (PA/VSI) at the referenced facility. This inspection is conducted pursuant to the Resource Conservation and Recovery Act, as amended (RCRA) Section 3007 and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA) Section 104(e). The referenced facility has generated, treated, stored, or disposed of hazardous waste subject to RCRA. The PA/VSI requires identification and systematic review of all solid waste streams at the facility. The objective of the PA/VSI is to determine whether or not releases of hazardous wastes or hazardous constituents have occurred or are occurring at the facility which may require further investigation. This analysis will also provide information to establish priorities for addressing any confirmed releases.

The visual site inspection of your facility is to verify the location of all solid waste management units (SWMUs) and areas of concern (AOCs) and to make a cursory determination of their condition by visual observation. The definitions of SWMUs and AOCs are included in Attachment I. The VSI supplements and updates data gathered during a preliminary file review. During this site inspection, no samples will be taken. A sampling visit to ascertain if releases of hazardous waste or constituents have occurred may be required at a later date.

Assistance of some of your personnel may be required in reviewing solid waste flow(s) or previous disposal practices. The site inspection is to provide a technical understanding of the present and past waste flows and handling, treatment, storage, and disposal practices. Photographs of the facility are necessary to document the condition of the units at the facility and the waste management practices used.

The VSI has been scheduled for May 26, 1993 at 12:30 p.m. The inspection team will consist of Mary Wojciechowski and Cathy Collins of PRC Environmental Management, Inc., a contractor for

the U.S. EPA. Representatives of the Michigan Department of Natural Resources may also be present. Your cooperation in admitting and assisting them while on site is appreciated.

The U.S. EPA recommends that personnel who are familiar with present and past manufacturing and waste management activities be available during the VSI. Access to any relevant maps, diagrams, hydrogeologic reports, environmental assessment reports, sampling data sheets, environmental permits (air, NPDES), manifests and/or correspondence is also necessary, as such information is needed to complete the PA/VSI.

If you have any questions, please contact me at (312) 886-4448 or Francene Harris at (312) 886-2884. A copy of the Preliminary Assessment/Visual Site Inspection Report, excluding the conclusions and Executive Summary portion will be sent when the report is available.

Sincerely yours,

Francene M. Harris for

Kevin M. Pierard, Chief
OH/MN Technical Enforcement Section

Enclosure

cc: Ken Burda, MDNR, Chief, Permit Section, Lansing Office